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ABSTRACT

By reviewing pertinent studies and data, this paper seeks to define the economic benefits of primary schooling within a worldwide context. The author concludes that investment in primary schooling results in more productivity at work and in the home. The returns from primary schooling in most developing countries are higher than from other forms of educational investment. Benefits of primary schooling include increased incomes for the poor, reduced fertility rates, increased farmer productivity, improved health and nutrition, and significant positive behavioral and attitudinal changes. The pressing needs in the Third World, for teacher-training facilities, books and equipment, curricular innovation, and the money to pay teacher's salaries, could be supplied by donor countries and agencies. Meanwhile, the author recommends further research on the impact of primary schooling on worker productivity outside the formal sector and on health and an analysis of qualitative change in schooling and its influence on school outcomes. (Author/WD)

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PRIMARY SCHOOLING AND ECONOMIC DEVELOPMENT: A REVIEW OF THE EVIDENCE

This paper pulls together recent work and evaluates the evidence on the contribution of primary schooling to development. Most educators would be familiar with the content though may not have seen it collected together in one place before. The paper is intended primarily however for non-educational staff concerned with development and especially for those concerned about the justification and priority for investing in primary schooling.

The paper shows that primary schooling increases productivity in all sectors of the economy, and that the economic returns to investment in primary education are in many countries considerably greater than those arising from other levels of schooling. In addition it has other important socio-economic effects: it reduces fertility, improves health and nutrition, and promotes significant behavioral and attitudinal changes at the level of both the individual and the community, which are helpful to the process of economic development. The evidence shows that the benefits of expanding primary schooling to cover all of the eligible age group are very considerable, even when school quality is low. It further shows that subsequent efforts to raise school quality by upgrading teachers and school resources are also likely to result in high economic returns in most poor countries. Lending strategies which give primary schooling a central place appear well justified; such approaches would be more conducive of growth-with-equity than most available alternatives.

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INTRODUCTION

1. Although the distinction between the consumption and investment aspects of educational expenditures has been familiar since the time of Adam Smith, major interest in the economic value of education was not kindled until as recently as 20 years ago. At that time, a series of aggregate production function studies suggested that a large part of the growth of the US economy during the first half of the twentieth century was attributable to increases in the stock of human capital (Denison, 1962). It seemed to be a matter of easy logic to translate the implications of this work to the developing world where skilled manpower was in critically short supply. Many such countries remained highly dependent upon the skills of non-citizen workers, particularly in senior positions in industry and government. Attention quickly shifted away from a lack of capital resources towards questions of 'absorptive capacity' and shortages of human skills as an explanation of disappointing growth performance. At the same time, the assumption was made that 'skilled' manpower was broadly synonymous with 'schooled' manpower: by implication, western modes of education were to become universal modes of skill creation, and educational investment would have to occupy a central part of investment strategy if growth was to proceed.

2. Of course, the facts about educational enrolments in the Third World broadly supported these views. For example, in the early 1960s, Africa was in quantitative terms the most under-schooled continent in the world: primary education then covered barely two-fifths of the relevant age-group, secondary covered only three percent, and university and other tertiary, a mere fifth of one percent. In these circumstances it is hardly surprising that the need for quantitative expansion appeared overwhelming. Reflecting this mood, the 1961 round of UNESCO Regional Conferences for Ministers of Education, held in Karachi, Addis Ababa and Santiago, adopted ambitious expansionary targets. Subsequently, the quantitative increases in enrolments throughout the developing world have been enormous. It can be seen from Table 1 that enrolments at primary level more than doubled in Africa and Latin America between 1960 and 1975, whilst in Asia they increased by almost 80 per cent. Growth at secondary and tertiary levels has been much faster - partly, however, reflecting the initially lower base - with rates of increase in enrolments in excess of 10 percent per year being typical (Table 2).

3. This change in the structure of school enrolments has had important budgetary implications for many countries. Secondary and tertiary provision is generally much more expensive than primary schooling - mainly because of higher salaries and more favorable teacher/pupil ratios at the higher levels. The broadening of the apex of the educational pyramid has therefore often meant that expenditures have risen considerably faster than total enrolments. Thus, in spite of the fact that the unit costs of secondary and tertiary education have tended to fall relative to primary (Table 3), many countries are now facing a severe budgetary constraint in education which is forcing a re-assessment of priorities.

4. Questioning of the recent pattern of school expansion has also been prompted by other factors. Over the last twenty years the structure of employment opportunities in the Third World has changed profoundly. Although graduate unemployment in India was emerging prior to 1947, elsewhere this was an unusual phenomenon even as late as 1960. More recently, however, unemployment of secondary school leavers has become widespread in the urban centres, and is often higher than open unemployment amongst those with less education. Furthermore, in many countries university graduates are finding it increasingly difficult to find the sort of jobs which their qualifications would normally justify and had previously led them to expect (Table 4). Accordingly, the 'skilled manpower' arguments for rapid secondary and tertiary expansion are no longer seen to be as pressing as they were some years ago.

5. For the same reasons, there has been increased concern expressed at both the national and international levels, that the primary span of education still excludes large numbers in the eligible age group. Although individual circumstances differ, and - in this sense - countries in Latin America are generally well ahead of those elsewhere, there are many countries with an acute (and worsening) secondary school leaver problem in which still less than two-thirds of the eligible age group are attending primary schools. This situation has served to sharpen the emphasis given to equity considerations in the allocation of educational resources - although often with disappointing results in the face of the strong social demand for schooling which, for good private maximising reasons, remains focused upon the top end of the school system.

6. But the reassertion of interest in primary schooling is not only based upon equity arguments. After all, education (and literacy) through schooling as a human right, pre-dated its recognition/perception as human capital, and most government plans - if not always their practice - adopt this as a sine qua non of educational strategy. There is, rather, a view that the literature on educational planning has insufficiently stressed the real benefits of primary schooling. Recent research has produced a considerable amount of evidence to suggest that primary schooling makes a significant contribution to economic and social development, and that these benefits have been given insufficient attention over the past few years. This paper attempts, briefly, to summarise this evidence and to draw out some of its implications. 1/ In doing so, it is necessary to include within our purview some results of work on post-primary schooling. This is for two reasons: first many studies have been comparative in nature, and have pointed to different social and economic effects arising from schooling at different levels; second some research on

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1/ The evidence reviewed in this paper largely excludes cross-national correlation studies of education and economic development. This is partly because earlier work in this tradition was generally subject to serious identification problems, and also because much of it did not focus specifically on primary schooling. However, recent refinements of both data and analysis have produced promising results, generating conclusions which would strengthen, rather than conflict with the findings of this paper (See Bowman 1980, Wheeler, 1980).

the schooling process per se is of relevance to a discussion of the effects of primary schooling even when the particular focus of the studies in question is at the post-primary level. The paper is in three sections. The first examines those outcomes of the schooling process which affect subsequent work activities; the second considers those that are independent of such activities; the final section brings together the conclusions and implications of the results discussed.

I. SCHOOL OUTCOMES AND WORKER PERFORMANCE

(a) Education and Productivity: The Theoretical Debate

7. Theoretical formulations of the relationship between years spent in school and subsequent worker productivity have been mainly concerned to account for two types of empirical phenomena which are widely observed in the formal sector labour market, at all stages of development, in both capitalist and socialist countries. Although our concerns are much wider than the impact of schools on formal skills and output, it is necessary to review the main elements of this debate. The first of these phenomena is that the main criteria used by most employers when hiring recruits at the bottom of the occupational ladder are the level and type of education they have received; as part of this process, eligibility for employment is often codified in terms of the minimum levels of formal education or training required. Second, that a characteristic of the wage and salary structure of most countries is that persons with more education tend to receive higher renumeration than those with less, whether in the same occupation or not.

8. The interpretation given to these phenomena, however, varies amongst different theoretical schools. The traditional view of human capital theorists has been that schooling raises labour productivity through its role in increasing the cognitive abilities of workers. At the lower occupational levels, basic numeracy and literacy, and at the higher levels, a greater capacity for logical and analytical reasoning, for self-expression, and sounder technical knowledge, have been held to have a fundamental impact upon effectiveness at work, and to provide the mechanism whereby the link between education and personal income became established. (Becker 1964, esp. Ch. 2) Thus, the view that higher labour productivity is a positive function of the amount of schooling received is the fundamental premise of human capital theory - even if higher educated workers <u>are</u> more productive, if these characteristics are formed other than by means of the schools, the economic rationale for investment in schooling is undermined.

9. One of the most recent challenges to this argument has recently come from a series of studies conducted in the United States. These present detailed analyses of a number of sets of data collected from national sample surveys. They focus upon the socio-economic correlates of lifetime earnings and of occupational status for men aged between 25 and 64 years. Together, tney form the most comprehensive empirical analysis of the determinants of inequality (Jencks et.al., 1972) and of individual occupational success (Jencks et.al., 1979) yet completed. With regard to the effects of education, their main conclusions are as follows:

10. In USA, when an individual first enters the labour market, the highest year of school or college he has completed is the best single predictor of his eventual occupational status. In spite of this, however, controlling adult test scores in addition to years of schooling has little extra effect upon the occupational value of education. This suggests that schooling does not enhance people's chances of entering a high status occupation primarily by improving their cognitive skills, because the latter - as measured by test scores or high school grades - are not rewarded independently of years of schooling (Jencks et.al., 1979:225). At higher levels of education, there is some additional evidence that college and graduate school grades are only minimally related to worker performance within particular occupations (Jencks et.al., 1972:187). Thus, the economic benefits of extra education seem not to derive from increases in cognitive ability, as proxied by test scores, and school grades have no significant effects upon earnings, once education is controlled (Jencks et. al., 1979:228).

11. These results have led some to argue that it is not the increase in cognitive abilities given by schooling which is valued by employers - rather it is the changes in the non-cognitive domain which are rewarded (Bowles 1971; Gintis 1971; Bowles and Gintis 1976). It is argued that there is a correspondence between the values attitudes and behavior inculcated by the schools and the traits required by employers. Although these traits may vary for posts at different levels of organizations, so too do the traits formed by different levels of schooling; at the lower levels, those of punctuality, obedience and respect for authority may be emphasized, but as one moves up through the school system the emphasis shifts to the encouragement of initiative, self-reliance, and the ability to make decisions. This, then, may provide an explanation for why hiring and promotional standards are heavily influenced by years spent in school, rather than upon grades received before leaving.

12. In some ways the 'correspondence' explanation for the link between education and earnings is not very different from, and is broadly compatible with the 'human-capital' explanation. Both argue that schooling institutes and nourishes changes in individuals which are valued by employers; for both, formal schooling is still needed to enhance the productivity of future workers, at least given the way that production is presently organized. Thus, these theories differ more in emphasis, than in the fundamental functional relationships they hold to exist.

13. There is a final possible explanation, however, for the demonstrated relationship between schooling and earnings which does present a broadside attack on the view that schooling provides significant economic returns. This is the view that schooling merely serves as a screening device - as a means of choosing between people of widely different capabilities, competing for a small number of jobs. In this interpretation, educational credentials act merely as surrogates for other qualities - such as intelligence and motivation - which will affect future productivity: but although they adequately predict future performance, they make no direct contribution to it.

14. Although this may seem unlikely, evidence against this hypothesis is extremely difficult to find. Jencks et.al. (1979) conclude that although completion of the main stages of education associated with gaining a certificate has a particularly high economic return, every year of schooling completed - with or without a certificate - brings salary benefits. Thus Berg's argument (1971) that schooling is only economically valued because it leads to formal credentials appears incorrect. In response, however, it could be argued that employers simply use years of school attended as a means of making marginal choices between individuals when certificates have not been obtained - that they are used as "surrogate" credentials in those circumstances. Moreover, although Blaug (1973) argues that the existence of internal labour markets where employers do not use educational background as a means of determining promotion invalidates the screening hypothesis, this, too, seems not to be correct. If education does effectively predict future productivity, that the promotion internally of able men independently of their educational background should allow the lifetime earnings differential of the educated to be protected should come as no surprise. Only if it did the opposite - that is if the more educated did not receive more of the promotions when employers had had a chance to get to know them better - would the screening argument become inadequate. And under those circumstances, of course, both the human capital and the correspondence explanations would equally be under attack.

15. In their strict form, all three of these theories, or explanations, are likely to be incorrect. However, all three are important in explaining part of the reality. Some minimum level of cognitive ability is necessary for doing most jobs in the formal sector, and some minimum set of attitudes and values is required if employees are to cope reasonably with the social and psychological demands of employment in hierarchical structures. If the schools produce these characteristics in their students, it is not surprising that we notice a general trend in salaries to reward these skills. At the same time, it is well-known that the minimum level of schooling required by employers for given jobs rises when the rate of growth of school outputs is faster than that of salaried employment. Thus, in many if not most societies, there is not necessarily any technical (or production function) relationship between the education currently required for job-eligibility, and the occupational skills needed for effective performance. There probably is, however, some minimum level of schooling that is absolutely essential for certain jobs, because of the ability to use or to acquire the necessary expertise.

16. It will already be clear that the theoretical debate about education and work has been primarily concerned with phenomena in the formal sector labour market. Its evidence and analysis has focused upon the salient features of wage and salary structures, hiring standards, and recruitment practices of formal employers, and of the requirements of work within the formal sector. Whilst we may wish, within the confines of that debate, to grant that some positive and causal relation between schooling and worker performance is likely, we also need to pose much wider questions than this: first, how does schooling act to increase productivity? Second, how do the effects of schooling vary at primary, as compared with post-primary levels? Third, are its effects upon output confined only to the formal sector, or does it have a wider impact upon agricultural and informal sector work? It is these questions to which we now turn.

(b) Measurable Effects of Schooling: Cognitive and Non-Cognitive Change

17. The theoretical positions which accept that schooling is important to productivity growth variously imply that this is so because of the cognitive or non-cognitive ("affective") changes brought about by school. It is clear that such changes in individuals do occur as a result of the schooling process, but it is less clear that school is the only, or indeed the best, means of achieving such changes. Evidence from all countries shows that cognitive abilities are enhanced by schooling, and that, however inefficiently, the major manifest aim of education is thereby promoted by formal schooling. Measures designed to test cognitive abilities normally employ standardized tests to measure retention of specific subject matter. Although such tests so often test memory, rather than analytic ability, there is a strong direct relationship between years spent in school and performance on such tests in all countries (Postlethwaite 1973). Nevertheless, the efficiency with which schools achieve such outcomes for their students varies enormously between rich and poor countries, between regions within one country, and between different schools. It will become clear that the reasons why there are such significant differences between cognitive outcomes are exceedingly complex, and often seem not to be due to factors that are internal to the school. For the moment, however, it should be noted that more schooling does mean higher cognitive achievement in general - at least in terms of the way this variable is conventionally measured.

18. Perhaps the most interesting work on the non-cognitive changes arising from schooling has arisen from studies of the determinants of individual modernity (Inkeles and Smith 1974; Inkeles and Holsinger (eds) 1974). This work has included a major empirical study, covering 6,000 individuals in six developing countries, which investigated the socio-economic correlates of values and attitudes held by "modern men". A modernization scale was developed by the authors which allowed ranking of the respondents on a scale from 0 - 100, based upon answers to 166, mainly multiple choice questions, grouped in various ways. The pattern which emerges in all countries gives striking evidence for the existence of a modernity "syndrome", the main elements of which respond to external influences in basically the same way. The authors find that insofar as men change under the influence of modernizing institutions, they do so by incorporating the norms implicit in such organizations into their own personality, and by expressing those norms through their own attitudes, values and behavior.

19. The school appears to be fundamental to this process. In the six countries studied, education was the single most important variable in explaining the variance of scores on the modernization scale. The median gap between the highest and lowest individual scores in the countries studied was 64 points. The authors calculate that after controlling for work experience, exposure to the media, and for all measurable early and late socialization variables, each year of schooling improved a man's score by about 2 points on the scale. This implies that education alone - on the basis of a 16 year cycle - was capable of producing half of the maximum observed change in attitudes and values, as measured by the modernity scale (Inkeles and Smith

1974:139). This result is in spite of the fact that none of the questions which went into determining the modernity ranking directly tested items which were objects of the school curriculum to impart. The effect of schooling was found to be cumulative and continuous, and even very small amounts of schooling had a positive effect as measured by the modernity scale.

20. The changes in attitudes and values promoted by schooling have been recognized for many years. Indeed the school has been used in some societies as an explicit means of changing earlier ideals and values to ones more supportive of those societies' chosen paths of development. This has perhaps been most common during periods of socialist transformation, as in Cuba, China and Tanzania. The limited evidence available, however, suggests that educational reforms take a considerable time to affect popular attitudes and values, and that they can in any case have little effect unless they are supported by broader economic and social reforms in economy and society (Colclough 1978, Shirk 1979). Thus, the school is not the only vehicle for non-cognitive development. Inkeles, indeed, found that factory work brought - year for year - almost as significant a change in attitudes as did schooling in the six countries studied. Some would go further to argue that the kind of non-cognitive changes promoted by schooling are inimical to personal and societal development (Illich 1972) - that school actually holds back, rather than liberates the creative capacities of individuals. From some ideological perspectives this may well be true. Empirically, however, the non-cognitive results of schooling are generally welcomed, and national ideologies of both right and left have used the school system as a means of strengthening - if not of leading - their attempts at nation-building.

21. With regard to the cognitive changes promoted by schooling, there are some additional caveats which should be considered. The question here is whether the difference in cognitive abilities promoted by different amounts of schooling are always great enough to justify universalizing access to all levels of the system. Whilst cognitive development may be almost impossible without the literacy and numeracy given by 4 to 6 years of schooling, the incremental progress made in subsequent years may be subject to rapidly diminishing returns. Whitla (1977), for example, shows that four years of college education does not improve learning ability for students confronting material outside their subject of specialism, although the reverse is true for new material within their own domain. Does this imply that particular modes of thought and discourse facilitate further learning within each mode at least up to a certain point, but that once new modes are tried, the increment of ability is cancelled? Cole et.al. (1978) believe that this is likely to be true. They provide evidence to suggest that differential performance between more and less educated people on standardized tests of memory and analytic ability is revealed mainly in tasks whose form and content are like those practised in school. The question remains as to how this school-related competence is transferred to other contexts. De Moura Castro (1975) suggests that limited transferability of such skills may account for the differential progress at school of people with different socio-economic backgrounds, which, he finds, is not mirrored by their differential progress during later working careers. This evidence, then, would suggest that schooled people will do

better and better so long as the idiom remains that of the school; but if the idiom is changed, non-schooled people may do quite as well. Labour market segmentation may exlain why such relationships are not more immediately obvious empirically. Nevertheless if higher cognitive abilities are thought not to bring productivity benefits on these grounds, there remain some uncomfortable facts to account for.

(c) Evidence on the Profitability of Investment in Primary and Post-Primary Education

22. (i) The Formal Sector. If we grant that both the theoretical arguments, and the ways in which employers in fact behave, do suggest that schooling makes people more productive during their future working life, the question arises as to how the returns to various levels of schooling compare. Most approaches to this question have focused upon the distribution of earnings - mainly within the formal sector - by level of education. This has involved the application of standard investment appraisal techniques to compare the costs and benefits of expenditures on various levels of education. Most approaches aim to calculate the rate of interest (or return) which would equate the discounted costs associated with a particular set of educational expenditures with their discounted benefits. There is an important distinction between private and social rates of return to education. Private rates usually compare the privately incurred costs of attending a particular programme - the costs of books, school uniforms, fees, and expected earning foregone - with the private benefits. These are usually taken as the difference between the post-tax earnings stream associated with graduates from this level of education and the similar stream that could be expected by the individual if the programme were not undertaken. Calculations of social rates, on the other hand, use the same methodology, but include, in addition to the private costs, all public expenditures or subsidies associated with the length of education in question (with the exception of student grants) and take pre-tax earnings differentials as a measure of benefits. Such studies have been completed for over 30 developed and developing countries, the main findings of which have been summarized and compared by Psacharopoulos (1973). Some results are shown in Table 5.

23. For present purposes, there are two important conclusions which can be drawn from that Table. First, in the developing countries covered by these studies, the mean private returns to each educational level are high, and considerably greater than the mean social returns. This demonstrates that there is a net public subsidy to education, even after taking account of the future taxation of the educated. This private 'calculus' also shows why the popular political pressures to expand the upper levels of the formal system are so high even in the presence of mounting unemployment at those levels: the probability of remaining unemployed would have to be quite high before undertaking higher education became unattractive.

24. The second, and more important point, is that both the private and social returns to primary schooling appear to be considerably greater than those at higher educational levels. This is one of the most consistent

findings of rate-of-return studies: in only three of the country studies covered by the Table were the rates of return to primary schooling somewhat lower than those to higher educational levels. This seems to imply, then, that at least in terms of profitability, and given the existing quality of education and the wage structure at each level, too much is being spent upon the higher levels of the system, and not enough resources are going to the primary schools.

25. There are, however, some aspects of the economic structure of developing countries which introduce a strong bias into the results of these studies, and which must be considered before accepting this conclusion about the relative neglect of primary education. First, the rates shown in Table 5 are unadjusted for unemployment. Since open unemployment amongst the educated is widespread in the developing world, such adjustments would have the effect of reducing the rates of return shown. Most of the rates at the primary level would thus be affected, although in many countries of Asia and Africa, the rates at secondary and higher levels would also be reduced to an even greater extent. Although each level would be differently affected, the evidence suggests that the adjustments would not in general affect the conclusion that primary schooling is associated with the highest rates-of-return. 1/

26. Second, a major problem with the cost-benefit approach to investment in education is that it typically ascribes all of the earnings differentials associated with graduates from different levels of the school system (within age-sex groupings) to these school-related differences. Clearly this is unrealistic. At least part of the earnings differential must be attributed to factors like ability, socio-economic background, and achievement motivation. Where data allow it, the better studies derive earnings functions after keeping these factors constant, using multiple regression analysis (Blaug 1971, Carnoy 1967; Thias and Carnoy 1972). Most, however, have simply applied a downward adjustment factor to the earnings profiles - often called the "alpha coefficient" (Blaug 1965) - which, on the basis of early evidence has often been estimated at a value of 0.6.2/ Other work, however, suggests that the lower the levels of schooling compared, the smaller the proportion of the income differential is due to education and the more is due to other factors like socio-economic background (Thias and Carnoy 1972). This result is confirmed by Jencks et.al. (1979), who also find that, at least in the USA after controlling for other factors - including socio-economic status and ability - the amount of these differentials explained by schooling alone is smaller than many studies have suggested, at least during the first and second cycles of formal schooling (Jencks et.al. 1979:182-183). The extent to which

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1/ See Table 4, which shows higher rates of unemployment amongst those with secondary and tertiary education, than those with primary, in selected countries. See also the detailed evidence of the country studies given in Psacharopoulos (1973): Ch.3.

2/ This would imply that 60 percent of the observed income differentials were attributable to education alone.

these results are applicable to less developed countries is discussed later in this paper. However, this evidence does suggest that the rates of return should be generally lower, and possibly closer together as between primary and secondary on the one hand, and higher education on the other, than the rates shown in Table 5. Such adjustments would be capable of changing the rank ordering of rates of return suggested in that table although - depending upon the magnitude of the adjustment made to the income stream associated with each educational level - they need not.

27. Finally, and more fundamentally, is the problem that these rates-of-return studies use market wages and salaries as means of determining educational benefits. Thus, if we are to attach operational significance to the observed differences between the social rates-of-return to primary, as compared with higher levels of education, we are required to accept the view, not merely that there is some direct relationship between earnings and labour productivity, but that these market wages truly reflect the different contributions to total output which would be given by employing additional workers at each level of schooling. This assumption of proportionality between market wages and the marginal productivity of different categories of labour carries with it a whole appendage of assumptions relating to the operation of free markets under competitive conditions, many of which have been seriously challenged as to their applicability in the typical economic circumstances of less developed countries. 1/ These criticisms will not be repeated here. 2/ For present purposes, it would, however, be useful to ask how the rate-of-return estimates might be affected if formal sector wages in less developed countries were determined more by competitive forces than they seem to be at present.

28. All the available data on wage differentials in poor countries suggest that the difference in remuneration between the highest and least well paid jobs is much greater than in richer countries. This is also true of average earnings when cross-classified by workers at different educational levels. For example, in those African countries where data are available, average earnings at each of the main exit points from the school-university system are between two and five times greater than those at the next lower level. Moreover, average earnings after university or college education are 20 to 30 times greater than those of employees who have had no formal schooling. 3/ These compare with differentials in Western European countries which are typically no more than two to three-fold for employees at the highest and lowest levels of education (UNECA 1978; Colclough 1974; Blaug 1970).

1/ This is not to say that the relevance of the assumptions of the competitive model are not being increasingly questioned also in the context of the changing economic and power structures of developed market economies.

2/ For a review of the evidence that labour markets in less developed countries are more imperfect than those of richer nations, see Turner 1965. The limitations of rate-of-return analysis in these circumstances, are discussed in Jolly and Colclough, 1972.

3/ It should be emphasised that these differentials are averages. Selection of individual jobs, or even occupation groups can reveal much greater differences than these.

29. Most observers agree that such differentials are much greater than can be explained merely by productivity differences. Even if, historically, salaries in the senior jobs of the formal sector were competitively determined in a situation of acute manpower shortage (a view which, itself, is not altogether plausible, given the widespread adoption of metropolitan salary structures at clerical levels and above. See Bennel 1978), the slow responsiveness of real wages to the subsequent dramatic changes in the supply situation suggests that wage determination in developing countries is not strongly (or quickly) influenced by conditions implicit in the assumptions of the competitive model.

30. All of this, then, is to say that the use of market wages in rate-of-return studies - whether or not adjusted for unemployment and the effect upon salaries of non-school factors - is likely to result in an over-estimation of the real production benefits of investing in higher, as opposed to lower levels of schooling. Differentials on the basis of 'shadow' 1/ wages - which cannot be accurately estimated - would be much narrower than those of market wages. Thus if it were possible to incorporate shadow wages in the calculations, the relative production efficiency of lower, relative to higher levels of schooling would probably be enhanced, and the results of the comparisons between educational levels given by Table 5 would then be strengthened rather than weakened. Such considerations suggest that the conclusion that primary education in the poorer countries has been neglected from an output-maximizing point of view - at least with regard to production in the formal sector - may be relatively robust.

31. (ii) Productivity Benefits Outside the Formal Sector. As more and more countries move towards universalizing access to primary schooling, an increasing number of primary leavers will remain in the rural areas to gain their livelihood. Typically, the proportion of the population so affected will be between half and two-thirds of the post-primary age group. Thus, if primary schooling is of some benefit to those who remain outside formal employment rather than being of no benefit, as most economic models have assumed, the economic arguments in favor of increasing the provision of schooling are thereby enhanced.

32. Recent work does suggest that the primary span of education has positive effects upon farmer productivity. Lockheed et.al. (1979) reviewed 18 studies conducted in 13 low-income countries concerning the extent to which the educational level of small farmers affects their production efficiency. These studies include analyses of 37 data sets collected over the last 12 years that allow statistical estimation of the effects of education, with other variables controlled. This work supports the following generalizations:

1/ Imputed marginal products.

33. First, in four-fifths of the cases examined, the relationship between years spent in school and agricultural output was positive, and in most of these cases the relationship was statistically significant. The authors estimate that four years of schooling, on average, increased output by about 8 percent, after holding all other factors constant.

34. Second, the most important determinant of whether or not education has a positive effect upon output is whether or not the farmer is living in a 'modernizing' environment. Specifically, the effect of education appears to be strong and positive only in areas where innovations in the technology used were able to be applied, such as new crop varieties, or access to more sophisticated equipment.

35. This is no less than we might expect. It suggests that education is particularly likely to increase the output of traditional farmers if other complementary attempts are made to change the farming environment - by the provision of roads or of access to marketing facilities, fertilizer, better crop varieties and so on. Data are not yet available to allow analysis of which of these other 'modernizing' influences are more or less critical for achieving - with education - a growth in farmer incomes. Nevertheless, as part of a package of other investments, education seems able to increase farmer productivity: the evidence suggests that four years schooling is capable of enhancing the output of modernizing farmers by as much as 10 percent per year, as compared to uneducated farmers in the same area, keeping land, capital and labour time constant. Although these results are promising, it has to be noted that in most of the studies surveyed the education variable was measured very simply by years of schooling. Thus, some of the apparent increases in output associated with education may arise from other omitted variables (such as inherited ability) which may be correlated with but not causally related to the number of years spent in school.

36. With regard to non-agricultural work, there is substantial evidence from the Third World that the more schooled individuals have a higher propensity to migrate from rural to urban areas, and that such migration is mainly influenced by economic motives (Caldwell, 1969; Berry and Sabot 1978, 1204). Not unrelated to this phenomenon is the fact that schooling tends to increase the rates of labor force participation of both men and women (Standing 1978). But whether such trends translate into increased rates of urban employment or of unemployment depends crucially upon local labor market conditions. We have seen that the structure of school expansion over the last 20 years has been associated, in some countries, with higher rates of unemployment amongst the more schooled participants in the labor force compared to those with less education. In part, this is because higher levels of schooling increase the potential income gains from extended job-search; some would also argue that, quite separately, they make people less willing to take low-status work in the informal sector (Standing 1978:146). This may be true. But the evidence for these relationships with regard to primary education appears less strong: in many countries hiring standards for most formal jobs have moved above the primary level; in such circumstances the benefits of "waiting" are reduced for primary graduates. Moreover, in some countries there appears to be evidence

of a positive relationship between years spent in primary school and the frequency of participation in informal sector work (see, for example, Botswana 1974: 38). In general, further expansion of primary schooling appears unlikely to have the dramatic effect upon levels of urban unemployment that some observers fear. As schooling continues to expand, for most countries, such arguments have relevance only at higher levels of the system.

37. In addition to the impact of primary schooling upon rates of participation, a second question concerns the productivity gains, if any, that it brings for workers in the urban informal sector. The evidence on this matter is at present less than satisfactory. Very few studies have been able to investigate earnings functions that incorporate adequate education variables. There is some evidence from the urban informal sector in Colombia that earnings differentials by education among age-sex groupings are substantial - although rather less than are found in the formal sector (Bourguignon 1979 and Kugler et.al. 1979; cited in Berry 1980). But these studies do not attempt to specify a complete model, and the differentials observed may be substantially influenced by other omitted variables. Other studies of the impact of education on urban poverty (such as Jallade 1977) are hampered by their lack of a clear delineation between elements of household incomes gained from formal and from informal sector work. Such research tends to show a substantial rate of return to primary schooling for the poorer households - albeit lower than that for richer groups. But this result may be in part influenced by the poorer households having more restricted access to formal sector wages, rather than being an exclusive reflection of the earnings benefits of primary schooling gained in the informal sector. Thus, while the available evidence gives cause to optimism, it remains circumstantial at present, and in this sense there is a gap in the research results that are currently available.

II OTHER EFFECTS OF PRIMARY SCHOOLING

(a) Non-Economic Effects

38. The evidence reviewed so far suggests that there is a strong theoretical and empirical basis for believing that schooling helps to make people more productive at work. In this regard, primary schooling appears to bring productivity benefits that are significant, and which have perhaps been underplayed in the past: there is a clear economic case for investing in primary education, which is quite separable from notions of equity, social demand or individual human rights. There are however additional benefits of schooling which narrow economic approaches so often fail to capture. These arise from the interactive or strengthening effects of schooling upon objectives of various aspects of social policy, including family size, health, nutrition, literacy and awareness of national culture. 1/ For example, a recent

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1/ In addition to the evidence reviewed below, the importance of the strengthening effects of primary schooling upon the achievement of social objectives in other sectors emerges clearly from the series of basic needs country studies conducted by the World Bank during 1978 and 1979. The results of this work are summarized in World Bank 1979a.

comprehensive survey of the evidence (Cochrane 1979) shows that the amount of schooling received by females indirectly affects their fertility in three main ways. First, it affects the 'biological supply' of children: by raising the age at marriage and reducing the proportion of women who are married, education is associated with a reduced exposure to pregnancy for women; on the other hand education also tends to raise fecundity by improving health, and by breaking down traditional taboos relating to post-partum abstinence Second, the demand for children tends to reduce with schooling: the perceived benefits of having more children fall, and the perceived costs appear to rise - mainly because of the enhanced earnings prospects which schooling brings. Third, the knowledge of how to regulate fertility through contraception increases with schooling, thus better enabling parents to have the number of children they want.

39. These factors obviously interact in various complex ways, resulting in no simply and universally observable relationship between the amount of schooling received and levels of individual fertility. However, the evidence from poor countries shows that increases in schooling are typically associated with first an increase and subsequently a decline in fertility. There are two important points to make about this relationship. First in those cases where there is an initial rise in fertility levels as the education of females increases, the onset of a decline in fertility starts before the end of primary schooling. For eight studies where data on fertility of females by age and level of education exist, and where education was associated with first a rise and then a fall in fertility, the mean years of schooling at which a peak in fertility occurs seems to be between three and four years (Cochrane 1979:36-39). Second, the frequency of this curvilinear, as opposed to uniformly inverse relationship also appears to decrease with increases in the average educational level of societies: in countries with high illiteracy, the occurrence of such a relationship appears to be almost twice a frequent as in those with relatively low illiteracy.

40. For our purposes, this work suggests that fertility levels could be reduced in the poorest countries by making primary schooling accessible to all. Moreover, the effects upon individuals of more schooling appear to be greater when it is widely available than when it is confined to only a few. Here the externalities appear to be substantial: this may be because in illiterate societies the attitudes towards contraception are hostile, and individual females are less easily able to change their behavior- even if they have the knowledge of how to do so - than in societies where predominant attitudes are more supportive. Whatever the reasons, however, this evidence significantly strengthens the case for universalizing primary schooling in poor communities.

41. The effects of education on health are no less complex. But the evidence for their existence is equally compelling. In principle, schooling can be expected to affect people's health in two main ways: first, for households at a given income level, schooling increases their ability to improve the nutritional content of diets, and to initiate earlier and more effective diagnosis of illness; second, the increased household income brought

by schooling, via its productivity effects, should lead to increased expenditures on food, housing and medical care - particularly amongst poorer households 1/ - bringing improved family health as a consequence. Thus, it is reasonable to expect better health amongst both adults and children in more schooled households. 2/ Most of the available evidence on these matters concerns the relationship between parental education and infant and child health. This is for two main reasons: first, children's health is more sensitive to current diet and surroundings than that of adults - thus, the impact of nutritional and environmental disadvantage is more easily measured amongst this group; second, there are strong grounds for imputing causality between more schooling and better health based upon correlations between the education of parents and the health of their children, in the sense that a causal relation could not in this case work the other way around. By contrast, it would be possible to question the direction of causality in the case of correlations between the schooling possessed by adults and their own health.

42. Recent reviews of the evidence suggest that such relationships exist. These studies show that there is a strong correlation across countries between life-expectancy - which is mainly influenced by variations in infant and child mortality - and literacy (Cochrane 1980). Moreover, with regard to data relating to up to 29 developing countries, both bivariate analysis (Cochrane 1979b) and multivariate studies (O'Hara 1979) show that infant and child mortality are lower, the higher the mother's level of schooling. The evidence suggests that a wife's education has a larger total effect on mortality than that of her husband, but that the combined effects of both parents being literate (as compared to having no schooling) may be such as to reduce mortality by up to 27 per 1000. Finally, there is evidence that maternal education not only reduces child mortality, but also improves the health of the survivors: children of more schooled mothers tend to be better nourished. It is also possible that they tend to suffer illness less frequently and less severely than other children, but the evidence for this is as yet insufficiently strong (Leslie and Cochrane 1979). Thus, there is a large amount of evidence, drawing on research conducted in many countries, which consistently shows that parents with greater amounts of primary schooling have healthier, longer-living children. Efforts to increase the coverage of primary schooling should, therefore, have positive long-run effects upon family health.

43. The schools' influence on individual modernity also has considerable relevance for economic and social change. Inkeles found that "those who had been in school longer were not only better informed and verbally more fluent. They had a different sense of time, and a stronger sense of personal and social efficacy; participated more actively in communical affairs; were more open to new ideas, new experiences and new people; interacted differently with others,

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1/ This is mainly because of higher income elasticities of demand for food amongst the poorer groups.

2/ For a theoretical treatment of the plausible effects of education on health, see O'Hara 1980.

and showed more concern for subordinates and minorities. They valued science more, accepted change more readily, and were more prepared to limit the number of children they would have" (1974:143). The interaction and strengthening of these individual changes which occurs as communities as a whole become more schooled, may well explain a good part of the external or associative benefits of schooling. We have seen that these effects are significant for fertility behavior, for agricultural innovation, and that similar effects on health and nutrition exist. Equally, other correlates of widely available schooling, such as exposure to mass media, have an interactive effect upon the direct benefits of schooling such as the retention of literacy (Simmons 1976).

44. Finally, numeracy and literacy are not only critical to the improvement of productivity at work and in the home, but also to the enhancement of satisfaction in leisure. In societies where illiteracy is widespread, the population has only restricted access to a wide range of potential consumption benefits. A high level of national literacy greatly enhances the possiblities for communication by the media, and accordingly the amount or popular participation in cultural and political life. Information can be made more easily accessible, which, in turn, can change people's perceptions and help to clarify the alternatives which face them. The evidence we have reviewed relating to the ways in which literacy appears to encourage adaptability and willingness to innovate, is no less important from a welfare point of view in the context of the family or of social and political life in a wider sense.

45. This is not to argue that the schools, as they are presently organized, are necessarily the most efficient means of accomplishing these ends. Indeed, the constraints imposed by existing links between the schools and the formal economy produce considerable distortions and inefficiencies in the learning process (Colclough 1977). Moreover most studies investigating the effects of schooling proxy both the form and content by a simple measure of 'years enrolled'. It may be, then, that the benefits - particularly for rural workers - could be increased by changing the content of schooling, with few, if any, costs for those who progress to higher educational levels, and subsequently join the formal sector. However, in the absence of evidence that alternative approaches (dual systems; non-formal education; integration of education and production; etc.) would achieve present learning objectives more effectively, the balance of research suggests that policies to extend the coverage of primary schooling would bring significant economic and social benefits in both urban and rural sectors.

(b) Distributional Effects of Quantitative Expansion and Qualitative Change

46. In the rural areas of most developing countries the enrolment ratios for the primary cycle are lower than in the towns. There are not only fewer school places, but also higher economic demands on the children, such as minding cattle and finding water or firewood, while their parents are less able to pay the necessary fees. Many children have to walk long distances to school, and tend to drop out sooner if they are suffering from malnutrition. Data which show that the children of richer groups are over-represented in the school systems of developing countries are available from a large number of

studies 1/. Thus, whilst research suggests that socio-economic background seems not to inhibit cognitive achievement in poor countries, the other constraints associated with economic deprivation do affect the ability of even bright and motivated children to enroll in and continue in school.

47. Since in most countries it is secondary and higher education which now is the main route to well paid formal employment, the favored access of the rich to these higher levels of schooling, and thence to more privileged positions in the labour market, tends to promote a growing concentration in the distribution of income over time. Thus policies to improve the access of the poorer groups to primary schooling - which would need to involve not only the provision of more school places in isolated areas, but policies designed to reduce the costs of school attendance - would reduce this trend towards an increasing concentration of human capital. Even though the total number of jobs would not increase, such policies would promote more equality of opportunity, and promote some movement towards a more equal distribution of income over time.

48. Thus, the arguments for expanding the primary span of schooling to cover the whole of the eligible age-group seem to be strong from the point of view of distributional goals. But in some countries of the Third World universal primary education has already been achieved, and in several others it is rapidly being approached. In such cases the relevant questions relate more to the costs and benefits of improving and standardizing the quality of primary schooling than to its further quantitative expansion. In any primary school system a wide range of actual unit costs exist: there are schools with many textbooks, well-trained teachers, high quality buildings and equipment; and there are many others with few or none of these things. What, then, are the likely benefits of increasing expenditure upon primary schooling aimed at reducing these imbalances? Would such a strategy improve the quality of student outputs sufficiently to justify the increased unit costs?

49. At first sight, work on the determinants of cognitive achievement conducted over the last two decades in rich countries does not augur well for strategies based upon equalizing school inputs. One of the first major reviews of the available evidence in the US (Coleman, 1966), concludes that "schools bring little influence to bear on a child's achievement that is independent of his background and general social context; and this very lack of an independent effect means that the inequalities imposed on children by their home, neighborhood and peer environemnt are carried along to become the inequalities with which they confront life at the end of school". Jencks' later review (1972) also found little evidence that school resources have a powerful effect upon student outcomes - although some school factors were sometimes important, they were not consistently so. Background factors, on the other hand, were always important: the socio-economic status of a student's family - his/her parent's income, education and occupation - invariably proves to be a significant predictor of his/her educational outcome.

1/ See those for Brazil (Jallade, 1977); India (Bhagwati, 1973; Dasgupta, 1973); Tunisia (Simmons,1974); Botswana (Campbell and Abbott 1976, Kann, 1978).

50. These results from the USA also tend to be confirmed by the recent International Evaluation of Educational Achievement (IEA) studies, which attempted to investigate the factors determining school achievement in 23 countries. Here too, school factors such as the type of school, the teacher's experience, and school equipment were not generally significant in predicting achievement test scores within countries. The home background of the student however - including father's and mother's education, father's occupation, the number of books in the home and family size - was significant. The director of the IEA studies concludes that they "provide little guidance for the improvement of educational enterprise. They point out the very decided importance of the input into any school system in determining its outcomes; but, as in the massive study of schools in the United States included in the Coleman report, the IEA results do little to accentuate the importance of differences between schools in their effects upon students." (Postlethwaite 1973)

51. There is, however, great danger in assuming that the results of the above studies are automatically applicable in developing countries. Even the IEA data included only four poorer countries amongst the 23 case studies. In circumstances where the richest 24 countries in the world were spending more than 40 times more per student in 1970 than the poorest 30 countries in the world the qualitative differences in educational provision within the developed world are much less than those across a sample of countries which includes representatives from both the richest and the poorest groups. 1/ In this sense, both the IEA and the USA data support results that are consistent with the view that schooling in rich countries is relatively standardised, so that the inter-school variations in quality are much less marked than the variation in home and financial backgrounds. In these circumstances, it is not surprising that the learning and cultural environment provided by the family emerges as having a a strongly dominant effect upon school outcomes.

52. Equally, more recent research from the US suggests that <u>some</u> types of school advantages do affect the cognitive outcomes of pupils. Rutter et.al. (1979) find that whilst differences in the physical facilities provided at secondary schools (size, age of buildings, space, equipment) were unimportant in determining outcomes, differences in social organization and teacher styles <u>were</u> significant. They find that "factors as varied as the degree of academic emphasis, teacher actions in lessons, the availability of incentives and rewards, good conditions for pupils, and the extent to which children were able to take responsibility are all significantly associated with outcome differences between schools" (Rutter 1979:178). Thus, whilst the data from the USA suggest that class sizes between 25 and 40 pupils do not significantly affect the teacher's ability to cope, the issue for many developing countries is whether this remains true for classes of 60 to 70 pupils. It would seem obvious that there is some critical minimum group of inputs to the schooling process which determines limits for the size of classes, the quality of teachers and physical facilties, and the availability of textbooks, if learning is to be possible, let alone efficient.

1/ See also Schiefelbein 1973, on this point.

53. Modest support for this view is now available from research studies conducted in a range of developing countries. Although an early review of the evidence concluded that the determinants of school achievement in rich and poor countries were basically the same (Alexander and Simmons, 1975) more recent work suggests that socio-economic background explains far less of the variance in school achievement, and that school-related factors explain far more, in developing than in industrialized societies (See Shuluka, 1974; Kann, 1979; Heyneman, 1976; and the references cited in Heyneman 1979). The present evidence on the difference in the importance of socio-economic status as an explanatory variable is stronger than that of the school-related variables. It may well be that the latter are important only until some minimum level has been satisfied, after which further qualitative improvement ceases to have much effect upon cognitive achievement. Much more work is required on the margins of tolerance for variations in these inputs in selected Third World countries. Meanwhile it is clear that conditions in primary schools in the poorer areas of the poorest countries are so bad that resources spent on improving their quality are almost certainly needed if the cognitive ability of their student outputs is to be enhanced.

III. CONCLUSIONS AND IMPLICATIONS

54. The case for investment in primary schooling is overwhelmingly that it makes people more productive at work and in the home. It goes far beyond the attainment of short-run consumption or equity goals, and far from being an obstacle to higher rates of economic growth, it helps to achieve them. In addition, primary schooling facilitates the attainment of other objectives of social policy, particularly in the fields of fertility control, improvements in health, nutrition, literacy and communications, and the strengthening of national culture.

55. The evidence suggests that the economic and social returns to investment in primary schooling in most developing countries are higher, at the present time, than other forms of educational investment. Moreover, in some of the poorest countries, where real rates of return on industrial and infrastructure projects are often small or even negative, the returns to investment in primary schooling appear to be very high indeed, and more attractive than many alternatives. In countries where a large proportion of the working population is dependent upon farming, and where rates of illiteracy are very high, primary schooling thus provides an investment opportunity which ought to have high priority on economic grounds.

56. An investment strategy which gives a central place to primary schooling will not only facilitate growth, but it will also do so in a more equitable way than most available alternatives. Even in industrial projects which enjoy high financial rates of return, isssues of taxation, ownership and control are crucial if these financial surpluses are subsequently to be of some benefit to poor people. By contrast, measures to extend and improve primary schooling involve direct expenditures on the poorest population groups. These expenditures subsequently increase the productivity of such people, and the returns to the

investment flow mainly to the individuals involved and to the communities in which they live. Investment in primary schooing thus provides a means of tackling the poverty problem directly. It represents not only a more attractive investment in many countries, but also a less risky means of increasing the incomes of the poorest people.

57. The evidence shows that the benefits of primary schooling arise from the cognitive and non-cognitive behavioral changes which the schooling experience brings. With regard to the latter, it appears that changes in attitudes and behavior are presently achieved even in the context of school systems of very low quality. The implication is that even if resources are scarce, and if the affordable quality of schooling is low, a further extension of the coverage of primary education can still be expected to bring benefits. In this sense, the evidence from fertility studies, and from studies of farmer productivity, suggest that the individual behavioral changes that result from schooling are stronger when literacy is widely spread that when it is more concentrated. There seems to be, then, an interactive effect between individual and community attitudes and values which significantly strengthens the economic and social case for universalizing access to primary schooling.

58. This is not to say that governments can be satisfied with quantitative expansion alone: the qualitative differences in school facilities as between rich and poor countries are serious indeed. For example, in 1975 the OECD countries were able to spend, on primary schooling, 33 times more per pupil than were the 36 poorest countries in the world (World Bank, 1979:49). The data from the IEA studies suggest that the qualitative gap between schools in rich and poor countries which these expenditure patterns lead to, in part accounts for the large differences in measured cognitive achievement between children in the two groups of countries who are at the same stage in their school career. It should be emphasized, however, that the much lower per capita expenditures on schooling in the Third World are not the result of lower priorities given to school finance: the proportion of GNP and of the government budget allocated to educational expenditures is not very different as between typical rich and poor countries. The expenditure differences arise rather, from an acute budgetary constraint in education which is facing many governments in the Third World. In these circumstances rapid improvement in the quality of primary schooling - though badly needed - will prove very difficult in the absence of greatly increased external support.

59. Whilst the pressing need for much more widely available and higher quality primary schooling is already recognized in many countries of the Third World, the implications of this for donor agencies are somewhat problematic. The need is not so much for school buildings - although where they are needed they can and should be built on a very low unit-cost basis - as for teacher-training facilities, for school books and equipment, for innovation with regard to school curricula, and for money to pay teachers' salaries. The last of these is extremely important, since upgrading the qualifications of the primary school teaching profession carries with it, in most countries, an immediate, and considerable, impact on the salary bill. Support for these items from donor countries and agencies would be highly desirable. But in

most cases the provision of such resources would require attitudinal and bureaucratic changes, together with some restructuring of existing lending priorities. Moreover, if a resource transfer in support of primary schooling were to be really significant, it is likely that some willingness to finance teachers' salaries and other local costs would also be required. These are contentious issues of policy in most donor agencies. But the evidence of this paper suggests that innovation along these lines could provide major benefits - particularly for the poorest countries and for the poorest groups in their populations.

60. Finally, whilst the case for investing in primary schooling is a strong one - and much firmer than has been conventionally assumed - there are some gaps in our knowledge which need to be filled. The most important general need is for more studies focussing upon the impact of primary schooling on worker productivity outside the formal sector. The existing studies analyzing its impact upon farmer productivity are very encouraging. But there are ways in which their methodology could usefully be refined in future. In particular, less crude measures of the amount of schooling received are required, and some independent measures for the abilities - independent of schooling - of the sampled populations would be an advantage in interpreting their results. Perhaps the greatest gap in this area, however, concerns the productivity impact of schooling on informal sector workers outside agriculture. More household income surveys are required from the peri-urban communities of developing countries to provide data on education - income relationships in the informal sector. Although initial results give grounds for optimism as to the beneficial effects of primary schooling, more work is required before these conclusions can be confidently accepted.

61. There are two other priority areas for further research. The first relates to the effects of primary schooling on health. Whilst good evidence exists, as we have seen, to show that schooling helps to reduce mortality and to improve nutrition, the available studies are ambiguous as to its effects upon the frequency and duration of illness. This is more a product of a lack of relevant evidence at present than of studies showing a neutral or negative impact, and more research in this area is likely to show that health as measured by morbidity is improved by exposure to schooling. The final area in which more work is required concerns the whole issue of qualitative change in schooling and its influence on school outcomes. We have argued that the available evidence suggests that there is a significant difference between the likely effects of improvements in school quality in poor and in rich countries, because of the high school standards which have already been reached in the more developed world. Although this is almost certainly true, further work aimed at clarifying these issues would be extremely helpful. Together with the results of past studies, research along these lines will complement the already formidable body of evidence which shows that primary schooling plays a crucial and indispensable role in the process of economic development.

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TABLE 1

Estimated Total Enrolment by Level of Education in the Developing World (Thousands)

REGION	YEAR	TOTAL[3]	1ST LEVEL	2ND LEVEL	3RD LEVEL
AFRICA	1960	21378	19458	1739	180
	1965	29903	26539	3058	306
	1975	53760	44498	8379	883
ASIA[1]	1960	118973	89687	26581	2704
	1965	160692	116507	39529	4656
	1975	230371	160063	61691	8618
LATIN[2] AMERICA	1960	31289	26628	4088	572
	1965	42167	34424	6829	914
	1975	72941	57071	12288	3582

Notes:

1. Not including China and the Democratic People's Republic of Korea.

2. Brazil: Beginning 1973, the duration of primary schooling was increased from 4 to 7 years and that of general education at the second level was reduced from 7 to 4 (3+1) years.

3. Not including pre-primary, special and adult education.

Source:

UNESCO, 1977.

TABLE 2

Annual Average Increase in Enrolment in the Developing World, 1960-1975 (Percentages)

REGION	YEARS	TOTAL[3]	1ST LEVEL	2ND LEVEL	3RD LEVEL
AFRICA	1960-65	6.9	6.4	12.0	11.2
	1965-75	6.0	5.3	10.6	11.2
ASIA[1]	1960-65	6.2	5.4	8.3	11.5
	1965-75	3.7	3.2	4.6	6.4
LATIN[2] AMERICA	1960-65	6.1	5.3	10.8	9.8
	1965-75	5.6	5.2	6.1	14.6

Notes:

1,2,3 Idem Table 1.

Source:

UNESCO, 1977.

TABLE 3

Ratios of Expenditure per Student (1st level = 100), Selected Countries and Years

		1st Level	2nd Level	3rd Level
Africa				
Ghana	1965	100	1201,8	21814,9
	1970	100	1015,0	16837,2
	1975	100	173,0	4853,7
Kenya	1965	100	1046,3	10907,8
	1970	100	685,9	5164,8
Nigeria	1970	100	483,1	9298,8
	1974	100	588,9	29735,5
Asia				
India	1965	100	505,0	2343,7
	1970	100	476,0	2086,9
	1975	100	-	432,3
Thailand	1965	100	275,5	1763,8
	1970	100	286,6	2603,5
	1975	100	149,2	894,8
Latin America				
Mexico	1965	100	200,5	1560,2
	1970	100	312,0	763,1
	1975	100	268,4	614,2
Colombia	1965	100	180,5	3168,6
	1970	100	205,3	2509,6
	1975	100	141,1	503,2
Argentina	1965	100	190,0	429,7
	1970	100	346,1	851,5
	1975	100	435,1	670,8

Source:

Calculated from UNESCO, 1977.

TABLE 4

Education and Unemployment: Selected Countries

	Rates of Unemployment			
	Illiterate	1 to 5 years education	6 to 11 years education	12 or more years education
Bogota, Colombia April 1967; Males	11.5	15.3	14.9	13.2
Females	4.1	22.0	16.3	11.3
		Primary	Secondary	Post Secondary
Buenos Aires, Argentina 1965; Total Labour Force	3.8	4.8	5.7	3.3
Venezuela 1969; Urban Areas	4.3	7.0	10.2	2.3
India, 1960/61;		Below Matriculation	Matriculation	Graduates
Urban Areas	1.2	2.7	7.0	2.8
Ceylon, 1963;	Illiterate & primary Grades 1-4	Secondary, Grades 5 to 8	Ordinary Certificate	Higher Certificate and above
Urban Areas	7.1	7.3	11.8	2.3
Malaya, 1965; Urban Areas 15-24 Labour Force	Illiterate	Primary	Secondary Grades I to IV	Higher Certificate and above
Male	10.4	19.5	30.9	15.5
Female	17.2	32.4	69.7	27.5
Syria, 1967;	Illiterate	Literate	Elementary to Secondary	Graduate
All Areas Total Labour Force	4.3	5.2	11.7	4.4

Source: Turnham, 1970

TABLE 5

Private and Social Rates of Return by Educational Levels in Less Developed Countries a/

	Primary	Secondary	Higher
Private Rate b/	29.6 (10)	18.5 (14)	22.0 (14)
Social Rate b/	18.4 (16)	15.2 (18)	12.4 (8)

Notes:

a. All countries had a GNP per capita of less than US$1,000 in 1968.

b. The number of country observations are in parentheses.

Source:

Psacharopoulos 1973, Tables 4.1 and 4.4.